

REMARKS

The present amendment is submitted in response to the Office Action mailed April 29, 2005. Claims 1-3 are currently pending in the application. By this amendment, Claims 1-3 have been amended. No new matter or issues are believed to be introduced by this amendment. In view of the amendments above and the remarks to follow, reconsideration and allowance of this application are respectfully requested.

112, Second Paragraph

Claims 2 was rejected under 35 U.S.C. §112, second paragraph. Specifically, the Examiner states that the body of Claim 2 recites the same method steps as in claim 1, but it does not recite any apparatus limitations through the preamble of claim 2 indicates that it is directed to an apparatus. Claim 2 has been amended in a manner which is believed to overcome the rejection.

35 U.S.C. §103(a)

Claims 1-3 were rejected under 35 U.S.C. §103(a) as being unpatentable over Miro et al., IEEE Publication, 1997, "A VLSI architecture for image geometrical transformations using an embedded core based processor", and further in view of Edirisinghe et al, IEEE Publication, 2000, "Shape Adaptive Padding for MPEG-4".

In the Office Action, the Examiner alleges that Miro discloses the step of “computing a zone in the departure space [ITL] by applying the inverse geometrical transformation [T.sup.-1] to a zone in the arrival space [TL] covering a group of image samples”. The Examiner cites Edirisinghe for curing a deficiency in Miro. Specifically, the Examiner alleges that Edirisinghe discloses the step of “establishing a group of input values [IV] for the zone in the departure space [ITL], the group of input values [IV] comprising Boolean values [BV], a Boolean input value having a certain position (x.sub.d, y.sub.d) in the departure space and designating the other values having the same position as being non-valid if the position is outside the set of image sample values”.

Independent Claim 1 has been amended herein to better define Applicant’s invention over Miro and Edirisinghe, individually and in combination. Claim 1 now recites limitations and/or features which are not disclosed by the cited references.

Claim 1 as amended herein recites:

1, A method of composing an image [IM], the method comprising a step of mapping [MAP] a set of image sample values [SV] from a departure space [DEP] to an arrival space [ARR] in accordance with a geometrical transformation [T], the method comprising the steps of

computing a zone in the departure space [ITL] by applying the inverse geometrical transformation [T.sup.-1] to a zone in the arrival space [TL] covering a group of image samples;

establishing a group of input values [IV] for the zone in the departure space [ITL], the group of input values [IV] comprising Boolean values [BV], a Boolean input value having a certain position (x_d, y_d) in the departure space [DEP] and designating the other values having the same position as being non-valid if the position is outside the set of image sample values;

constructing a Boolean shaped bitmap [BM] for the zone in the departure space [ITL], the boolean shaped bitmap [BM] comprised of a plurality of Boolean input values, each value having a certain coordinate position (x_d, y_d) in the departure space [DEP];

assigning a '1' value to those coordinate positions in the Boolean shaped bitmap [BM] in the departure space [ITL] corresponding to coordinate positions (x_d, y_d) of image samples [SV] located inside the zone in the departure space [ITL] and coordinate positions (x_d, y_d) of image samples [SV] not flagged as outside by shape information [SSV]

assigning a '0' value to those coordinate positions in the Boolean shaped bitmap [BM] in the departure space [ITL] corresponding to coordinate positions (x_d, y_d) of image samples located outside the zone in the departure space [ITL] or coordinate positions (x_d, y_d) of image samples flagged as being outside the zone in the departure space [ITL] by said shape information [SSV];

composing the group of image samples [SV] in the zone of the departure space [ITL] from the group of input values [IV], using the Boolean values [BV] to prevent those input values designated as being non-valid from contributing to an image sample [SV] by replacing the input values [IV] designated as being invalid with at least one other input value [IV] from inside the zone in the departure space [ITL] designated as being valid. [Emphasis Added]

Edirisinghe teaches a method that requires a ‘pre-processing’ or extrapolation operation that requires global access on the entire picture. Edirisinghe recites in the Abstract, “in MPEG-4, the boundary blocks of reference video objects are padded by replicating the boundary samples towards the exterior”. Edirisinghe further states at the bottom of Col. 2 – top of Col. 3, “These include the interior (standard) macro-blocks as well as the boundary (contour) macro-blocks, as indicated in Fig. 1.”

In contrast to Edirisinghe, the method of the invention composes the picture zone by zone. For a particular input zone, certain samples are computed to be outside the input zone. For these samples, other samples are provided as substitute samples, wherein the substitute samples are (1) designated as valid values, and (2) derived from inside the input zone. Edirisinghe teaches the use of padded pixels that can be the result of propagated values coming from areas of the picture far away from the padded position.

As such, the padded pixels are not pixels derived from inside the input zone. Claim 1 recites in part,

composing the group of image samples [SV] in the zone in the departure space [ITL] from the group of input values [IV] using the Boolean input values [BV] to prevent those input values designated as being non-valid from contributing to an image sample [SV] by replacing the input values [IV] designated as being non-valid with at least one other input value [IV] from inside the zone in the departure space [ITL] designated as being valid. [Emphasis Added]

It is respectfully submitted that, based on at least the above, at least the limitations and/or features of independent Claim 1 is believed to be patentably distinct over Miro and Edirisinghe, individually and in combination. Therefore, reconsideration and withdrawal of the rejection is respectfully requested and allowance of claim 1 is respectfully requested.

Independent Claims 2 and 3 recite similar subject matter as Claim 1 and therefore contain the limitations of Claim 1. Hence, for at least the same reasons given for Claim 1, Claims 2 and 3 are believed to recite statutory subject matter under 35 U.S.C. §103(a).

Accordingly, it is respectfully requested that the rejection under 35 U.S.C. §103(a) of independent claims 2 and 3 be withdrawn, and independent claims 2 and 3 be allowed.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-3 are believed to be in condition for allowance and patentably distinguishable over the art of record.

Respectfully submitted,



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